ABSTRACTS

Editorial Comment: A fixed style of presentation for this department of Anesthesiology has purposely not been defined. It is the wish of the Editorial Board to provide our readers with the type of abstract they desire. Correspondence is invited offering suggestions in regard to the length of abstracts, character of them, and source of them. The Board will appreciate the cooperation of the membership of the Society in submitting abstracts of outstanding articles to be considered for publication.


"State and Wangensteen (1946) published results of clinical use of procaine intravenously to combat various types of allergic reactions. . . . State and Wangensteen suggest several possible modes of action of procaine against allergic phenomena: (1) an antihistaminic action, (2) an anticholinergic action, (3) an epinephrine potentiating action, and (4) a direct action on cells, specifically an anesthetizing of pain fibers from muscles and joints. . . . I felt that the previously demonstrated antagonism of procaine to histamine on smooth muscle preparations was perhaps only a musculotropic action instead of a specific antihistaminic action and that the observations in vivo deserved further investigation. . . .

"In the present experiments . . . [procaine intravenously] failed to affect the release of histamine by blood cells, and it failed locally to protect the skin from histamine-induced wheals. Locally, it does seem to give some protection from inflammation induced by a primary irritant. It diminishes the histamine-induced contractions of smooth muscle, but only in concentrations phenomenally greater than therapeutic blood levels either of itself or of its hydrolytic products. Significantly, it potentiates an antigen-antibody reaction locally induced in the rabbit's skin, and intravenously, it potentiates the toxicity of histamine to respiratory function in puppies. The interpretation of these experiments is vague in relation to clinical use of procaine intravenously against allergic phenomena. However, its therapeutic efficacy seems to remain an empirical observation not well supported by experimental pharmacological observations."

A. A.


"The objective of checking bleeding from injured tissues is quite understandably older than any attempt to provide the surgeon with a bloodless field for a planned intervention, and efforts to secure it did not necessarily depend upon a knowledge of the circulation of the blood. . . . However, until the middle of the nineteenth century the tourniquet was merely a constricting band, and sometimes a destructive one at that. In order to provide a field in which the surgeon could operate upon an extremity unhampered by bleeding, in the eighteen-fifties Esmarch introduced his method of forcing the blood out of a limb by the centripetal application of an elastic bandage and the application of a second similar bandage at the root of the limb before the first was removed. . . . An alternative method based on physiological principles deduced from
both animal and hominal experiments was introduced about the same time by Lister (1879). Lister showed that on elevation of a limb its veins emptied by gravity and that after a few minutes its arteries underwent reflex contraction, so that the volume of blood entering the extremity was minimal; a tourniquet was then applied to the root of the limb. . . . In most of the reported cases of tourniquet paralysis the arm has been the site of application. . . . It seems to me of great significance that in those cases of tourniquet paralysis which have been investigated by surgical exploration the band employed has been narrow and unyielding, and that the operations have disclosed neuromata at the site of pressure. . . .

"There is a practical objection to the use of any tourniquet. After its release, and, as shown by Lister, whether the limb is elevated or not, there ensues in the distal part of the limb a period of reactive hyperaemia during which free bleeding occurs from innumerable tiny dilated vessels which do not lend themselves to foreign pressure or ligation. . . . I have come to hold the view that if the possibility of local trauma to nerves can be eliminated by the selection of a suitable tourniquet it is best to complete an operative procedure without releasing it, provided that at the termination of the operation time is allowed for the disappearance of reactionary hyperaemia before haemostasis is considered to be satisfactory and the wound is closed. . . . It is not surprising that efforts have been made to secure ischaemic or partly ischaemic operative fields in the head and neck and in the trunk. My own experience has been confined to testing the usefulness of these efforts during operations on the trunk. . . .

"Before adopting any such hypotensive technique, the surgeon must be equally sure that certain hypothetical undesirable sequels will not occur. First he must be certain that systemic hypotension of the duration proposed will not impair, temporarily or permanently, the function of any organ or any tissue, and particularly of any essential organ or any tissue which is known to be unduly sensitive to ischaemia, such as the central nervous system, the heart, the liver, and the kidneys. Secondly, he must know that, after the period of hypotension is over, the return to normal of systemic blood pressure will not be followed by reactionary bleeding. . . . Thirdly . . . he must know that, especially in procedures which require large operative fields, sufficient circulation will be soon enough established after the wound is closed to provide adequate humoral defence-mechanisms against the multiplication and invasion of any stray organisms. . . .

"In my unit the method employed by Dr. Gillies and his staff to secure hypotension has been the production of generalized vasodilatation by paralysing, with a spinal anaesthetic, the preganglionic fibres of the whole thoracolumbar sympathetic outflow. . . . It has been shown in our unit that the oxygen requirements of the tissues are related to the state of unconsciousness, and not to the plane of anaesthesia, and that when the cardiac output is lowered during the period of hypotension it is still sufficient to provide an adequate supply of oxygen. Moreover, the dilatation of the smaller arteries and arterioles prevents the occurrence of the phenomenon termed by Krogh (1922) 'plasma skimming,' in which during contraction of the vessels their branches receive only the peripheral flow of plasma, the erythrocytes as they pass in the axial stream escaping the mouths of lateral branches. Plasma skimming results in local anoxia. . . . Hypotension follows
the administration of suitable doses of ganglion-blocking drugs such as hexamethonium (Paton, 1952); the state produced is somewhat similar to that after the spinal blockade of preganglionic fibres, in that the blood volume is not reduced. . . . A combination of the hypotensive and cooling techniques has many possibilities in facilitating and extending surgical procedures, particularly perhaps those employed in cardiac surgery."

A. A.


"This discussion will be limited to what I consider the most satisfactory analgesic agent for use in obstetrics and minor surgery—trichlorethylene or Trilene—with particular emphasis on the value of this agent to the general practitioner. . . . In a preliminary report published in G. P., April, 1952, I listed the following advantages, which after 62 additional cases, I find no cause to change: (1) It is safe to use in minor pediatric surgery; (2) it has a potent analgesic and amnestic effect, given alone or in combination with Demerol and/or scopolamine; (3) its odor is not unpleasant; (4) induction is rapid and awakening rapid and lucid; (5) side effects such as restlessness, nausea, vomiting, and headache are minimal; (6) it can be employed for long periods of time without endangering mother or child, or affecting the uterus; (7) the incidence of hemorrhage and other obstetric complications is not increased; (8) labor is not prolonged; (9) administration is simple and easy; (10) it boosts the morale of the parturient woman; (11) it does not depress fetal respiration; (12) it can be used safely even in the absence of a doctor."

A. A.


"The possibility that milk secretion may be modified by acetyl-choline led us to undertake experiments on the mammary glands, pregnancy and lactation in animals in which the amount of acetyl-choline was increased by injecting prostigmin. We have approached this problem in two ways: (a) by giving estrogens in constant amounts per week followed by prostigmin, and (b) by injections of prostigmin alone. . . . Experiments were conducted [in guinea pigs and] in breeding rats. . . . We have continued these studies in a series of 18 women in the last two weeks of pregnancy. . . . From these studies it is evident that acetyl-choline induced by prostigmin has no noticeable effect on lactation in guinea pigs, rats and humans. The mammary glands developed and milk secretion occurred in advanced pregnancy even though prostigmin was being given. Growth of the young was not affected. Acetyl-choline appears to be of no significant value in lactation."

A. A.


"The use of an adjunct with nitrous oxide-oxygen for the production of anesthesia in dental operations is widespread. . . . Its use simplifies the administration of an anesthetic to young children and to debilitated individuals. . . . Thiambylal sodium and trichlorethylene are excellent adjuncts for use with nitrous oxide-oxygen in the dental office."

A. A.